

WHAT IS CLAIMED IS:

1. A method for treating presbyopia in a patient, the method comprising:
ablating a central zone of a corneal surface of a first eye of the patient to
improve the patient's ability to view near objects through the central zone of the first eye; and
ablating a peripheral zone of a corneal surface of a second eye of the patient to
improve the patient's ability to view near objects through the peripheral zone of the second
eye.
2. A method as in claim 1, wherein the central zone produced during the
first ablating step comprises a substantially spherical surface.
3. A method as in claim 1, wherein the central zone produced during the
first ablating step comprises a multifocal aspheric surface.
4. A method as in claim 1, wherein ablating the central zone of the
corneal surface of the first eye comprises leaving a small central portion of the corneal
surface untreated.
5. A method as in claim 1, wherein the ablated central zone has a
diameter scaled to a diameter of a pupil of the first eye.
6. A method as in claim 1, wherein the ablated central zone has an optical
power of between about 0.5 and 4.0 Diopters.
7. A method as in claim 6, wherein the ablated central zone has an optical
power of between about 1.0 and 3.0 Diopters.
8. A method as in claim 6, wherein the ablated central zone has an optical
power of about 1.75 Diopters.
9. A method as in claim 1, further comprising ablating a peripheral zone
of the corneal surface of the first eye to improve the patient's ability to view far objects
through the peripheral zone of the first eye.

10. A method as in claim 9, wherein the peripheral zone of the first eye extends radially outward from an outer boundary of the ablated central zone of the first eye to a diameter approximately matching an outer boundary of a pupil of the first eye.

11. A method as in claim 9, further comprising ablating a transition zone of the corneal surface of the first eye, the transition zone extending from an outer boundary of the ablated peripheral zone of the first eye.

12. A method as in claim 1, wherein ablating the peripheral zone of the corneal surface of the second eye comprises leaving a central zone of the corneal surface of the second eye untreated to provide for vision of distant objects through the central zone.

13. A method as in claim 12, wherein the central zone of the second eye has a diameter scaled to a diameter of a pupil of the second eye.

14. A method as in claim 1, further comprising ablating a central zone of the corneal surface of the second eye to improve the patient's ability to view distant objects through the central zone.

15. A method for performing laser eye surgery on a patient to treat presbyopia, the method comprising:

determining a first ablative shape for a corneal surface, the first ablative shape enhancing vision of near objects through a central zone of an eye;

ablating a corneal surface of a first eye of the patient according to the first ablative shape;

determining a second ablative shape for a corneal surface, the second ablative shape enhancing vision of near objects through a peripheral zone of an eye; and

ablating a corneal surface of a second eye of the patient according to the second ablative shape.

16. A method as in claim 15, wherein the first ablative shape comprises a central zone having a substantially spherical surface.

17. A method as in claim 15, wherein the first ablative shape comprises a central zone having a multifocal aspheric surface.

18. A method as in claim 15, wherein the first ablative shape comprises a small central portion of the central zone that remains untreated.

19. A method as in claim 15, wherein the central zone of the eye according to the first ablation shape has a diameter scaled to a diameter of a pupil of the first eye.

20. A method as in claim 15, wherein the central zone of the eye according to the first ablative shape has an optical power of between about 0.5 and 4.0 Diopters.

21. A method as in claim 20, wherein the central zone of the eye according to the first ablative shape has an optical power of between about 1.0 and 3.0 Diopters.

22. A method as in claim 20, wherein the central zone of the eye according to the first ablative shape has an optical power of about 1.75 Diopters.

23. A method as in claim 15, wherein the first ablative shape includes a peripheral zone, wherein the peripheral zone is shaped to provide for vision of distant objects.

24. A method as in claim 23, wherein the first ablative shape further includes a transition zone, the transition zone extending from an outer boundary of the peripheral zone.

25. A method as in claim 15, wherein the second ablative shape includes an untreated central zone to provide for vision of distant objects.

26. A method as in claim 15, wherein the second ablative shape includes a central zone shaped to improve the patient's ability to view distant objects.

27. A laser eye surgery system for treating presbyopia in a patient, the system comprising:

a laser device for emitting a beam of ablative energy; and

a processor coupled with the laser device to direct the beam of ablative energy to ablate a first ablative shape on a corneal surface of a first eye of the patient and a second ablative shape on a corneal surface of a second eye of the patient, wherein the first ablative shape enhances near vision through a central zone of the first eye, and the second ablative shape enhances near vision through a peripheral zone of the second eye.

28. A system as in claim 27, wherein the processor includes an ablative shape module for directing the laser device to ablate the first and second ablative shapes.

29. A system as in claim 27, wherein the central zone of the first ablative shape comprises a substantially spherical surface.

30. A system as in claim 27, wherein the central zone of the first ablative shape comprises a multifocal aspheric surface.

31. A system as in claim 27, wherein the first ablative shape includes a small untreated central portion within the central zone.

32. A system as in claim 27, wherein the central zone of the first ablative shape has a diameter scaled to a diameter of a pupil of the first eye.

33. A system as in claim 27, wherein the central zone of the first ablative shape has an optical power of between about 0.5 and 4.0 Diopters.

34. A system as in claim 33, wherein the central zone has an optical power of between about 1.0 and 3.0 Diopters.

35. A system as in claim 34, wherein the central zone has an optical power of about 1.75 Diopters.

36. A system as in claim 27, wherein the first ablative shape further comprises a peripheral zone for viewing distant objects.

37. A system as in claim 36, wherein the first ablative shape further includes a transition zone, the transition zone extending from an outer boundary of the peripheral zone.

38. A system as in claim 27, wherein the second ablative shape includes an untreated central zone to provide for vision of distant objects.

39. A system as in claim 27, wherein the second ablative shape includes a central zone shaped to improve the patient's ability to view distant objects.